CONCEPT OF THE DOE REGULATORY PROCESS FOR RADIOLOGICAL, NUCLEAR, AND PROCESS SAFETY FOR TWRS PRIVATIZATION CONTRACTORS

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1.0 Concept

The basic concept of DOE's regulatory approach to radiological, nuclear, and process safety is that the Contractor be responsible for 1) achieving adequate safety, 2) complying with applicable laws and legal requirements, and 3) conforming with top-level safety standards and principles stipulated by DOE. Consistent with applicable laws and legal requirements, the Contractor is required to tailor the exercise of this responsibility to the specific hazards associated with its activities. The Contractor is encouraged to exercise this responsibility in a cost-effective manner that applies best commercial practices.

DOE is including radiological, nuclear, and process safety within the TWRS Privatization regulatory scope. Process safety--safety from hazardous chemicals that may be in the DOE-provided waste or introduced into the treatment system as chemical agents --is incorporated into DOE's regulatory scope because 1) chemical hazards are intimately bound to and co-exist with the radiological and nuclear hazards in the waste; 2) enhanced assurance of worker health and safety is important to the success of TWRS Privatization; and, 3) the nuclear industry normally incorporates significant non-nuclear hazards with the evaluation of radiological and nuclear hazards, particularly if the non-nuclear hazards may affect the nature and the control of the radiological and nuclear hazards. Incorporation of process safety into the DOE regulatory scope means that chemical hazards and their control will be 1) evaluated by the Contractor and DOE concurrently with the evaluation of the radiological and nuclear hazards, 2) included as aspects of the DOE/Contractor regulatory interactions, and 3) considered by DOE in arriving at its regulatory decisions. Incorporating process safety in the DOE regulatory scope ensures that adequate protection from radiological, nuclear, and chemical hazards is achieved in an integrated, consistent, and balanced manner. While this incorporation enhances the execution of DOE's responsibilities for ensuring adequate safety, it in no way replaces the authority of OSHA for process safety or relieves the Contractor from any obligation to comply with OSHA regulations.

2.0 Regulatory Framework for Radiological, Nuclear, and Process Safety

For its regulation of the TWRS Privatization Contractors, DOE will rely substantially on its nuclear safety rules (10 CFR 830, 10 CFR 834, and 10 CFR 835) and on the application of fundamental principles of radiological, nuclear, and process safety. DOE will draw heavily upon the concepts and principles established from the experiences of the commercial nuclear community, including the reactor sector, and the chemical industry.

To facilitate definitive, decisive, and timely regulatory decisions and actions, two basic activities must be accomplished. The first, which is a responsibility of the Contractor, is to identify and recommend to DOE the set of standards and requirements necessary to ensure safety. The second, which is a responsibility of DOE, is to execute the DOE-established regulatory process. This process will result in authorizations of Contractor actions (start of construction, start of waste processing operations, and start of deactivation) and confirmation that the Contractor's activities are performed safely and within approved limits.

The DOE regulatory approach requires that the Contractor take an active and significant role in identifying and recommending the standards and requirements it will use to achieve adequate safety for its specific activities. These standards and requirements shall include applicable legal requirements and shall be based on a set of DOE-stipulated top-level standards and principles for effective radiological, nuclear, and process safety. The top-level standards include the radiation exposure limits for the general public, co-located workers, and workers in the facility. The top-level principles provide proven practices for the control of radiological, nuclear, and chemical hazards. The top-level radiological and nuclear principles have been drawn from pertinent sources, including publications by the International Atomic Energy Agency (IAEA) and the NRC. The top-level process safety principles, addressing hazardous chemicals, have been drawn from pertinent sources, including publications of the Center for Chemical Process Safety of the American Institute of Chemical Engineers and OSHA. These top-level safety standards and principles are presented in the Solicitation document titled, *Top-Level Radiological, Nuclear, and Process Safety Standards and*

Principles for TWRS Privatization Contractors, DOE/RL-96-0006.

DOE requires that the Contractor follow a DOE-specified, structured process to identify the set of subordinate standards and requirements that, when properly implemented, provide adequate safety, comply with legal requirements, and conform to the top-level safety standards and principles. Consistent with meeting legal requirements, the Contractor will have significant responsibility and flexibility for identifying its standards and requirements within the context of 1) the Contractor's specific technology and processes, 2) the work to be performed, 3) the character and magnitude of the radiological, nuclear, and chemical hazards involved, and 4) the selected means of mitigating the hazards. In its set of standards and requirements, the Contractor must include the applicable DOE nuclear safety regulations in 10 CFR 830, 10 CFR 834, and 10 CFR 835. The structured process to be used by the Contractor for identifying and recommending the set of standards and requirements is contained in the Solicitation document titled, *Process for Establishing a Set of Radiological, Nuclear, and Process Safety Standards and Requirements for TWRS Privatization*, DOE/RL-96-0004. DOE will review and approve the Contractor's recommended set, which when approved, will become the Safety Requirements Document. Compliance with the Safety Requirements Document will become a requirement of the Contract.

DOE will formally review and authorize the construction and operation of the Contractor's facility to process radioactive waste. This formal regulatory process will require definitive, decisive, and timely actions on the parts of both the Contractor and DOE to ensure safety while complying with the schedule of the *Tri-Party Agreement* and accommodating the fixed-price Contract. DOE will prepare the appropriate guidance documents covering the deliverables identified in Standard 4 of the Solicitation. The Solicitation document that outlines this process is titled, *DOE Regulatory Process for Radiological, Nuclear, and Process Safety for TWRS Privatization Contractors*, DOE/RL-96-0003.

DOE's regulation will provide for continuing regulatory oversight and for enforcement action when necessary.